CLAIMS

What is claimed is:

SUB A1

1. A detection device for detecting persons or objects and the direction of movement thereof, comprising:

a radiation sensor arrangement for detecting electromagnetic radiation of the wavelength of visible and/or invisible light, which emanates from the person or object, and

an evaluation unit that is connected to the sensor arrangement and that forms a variation signal which corresponds to a time variation of the radiation detected by the radiation sensor arrangement,

wherein the detection device further comprises a means for individualizing that is connected to the evaluation unit and that obtains information individualizing the object or person, and that is connected to a store that stores at least a portion of the variation signal and the information individualizing the object or the person as a characteristic parameter in association with the variation signal, and

wherein the detection device further comprises a means for determining a parameter that is connected to the evaluation unit and that delivers an additional signal, and

wherein the evaluation unit forms the characteristic parameter in dependence on the additional signal,

wherein the parameter-determining means comprises a radiation source for radiation which can be detected by the sensor arrangement or alternatively or additionally to the radiation source comprises an additional sensor for detecting a person-individual signal.

2. The detection device of claim 1, wherein the individualising means forms the characteristic parameter from the morphology of the variation signal.

3. The detection device of claim 2, wherein the radiation source is an infrared light source which preferably emits radiation in the wavelength range of greater than 1400 nm.

4. The detection device of claim 3, wherein the evaluation unit is connected to the radiation source and the sensor arrangement determines, as an additional signal, the transit time of a signal which is emitted by the radiation source and reflected by the object or person and received by the sensor arrangement.

5. The detection device of claim 4, wherein the evaluation unit is connected to the radiation source and the sensor arrangement and determines a degree of reflection as an additional signal.

6. The detection device of claim 5, wherein the radiation source emits a coded signal and wherein the evaluation unit determines the proportion of the coded signal in the radiation received by the sensor arrangement.

7. The detection device of claim 6, wherein the evaluation unit forms a degree of reflection from the ratio of the intensity of the proportion of the coded signal in the radiation received by the sensor arrangement to the intensity of the radiation emitted by the radiation source.

8. The detection device of claim 7, wherein the coded signal is a periodic signal and wherein the evaluation unit determines the transit time of a reflected signal in dependence on the phase relationship between a coded signal received by the sensor arrangement and a coded signal emitted by the radiation source.

9. The detection device of claim 8, wherein the sensor arrangement comprises at least two sensor elements and wherein the evaluation unit forms at least two variation signals for different sensor elements.

10. The detection device of claim 9, wherein the evaluation unit compares portions of one or more variation signals which were recorded at the same time as each other or in time-displaced relationship.

11. The detection device of claim 10, wherein the evaluation unit forms a correlation coefficient by comparing the variation signal portions.

12. The detection device of claim 11, wherein the evaluation unit implements a plurality of times comparison of signal portions originating from different sensor elements, in such a way that the signal portions for each comparison are shifted in time relative to each other by different time differences, and wherein a transit time signal is formed, which corresponds to that time displacement which affords the greatest similarity or best correlation of the signal portions being compared.

13. The detection device of claim 12, wherein the evaluation unit forms a speed signal from the transit time signal and from a predeterminable spacing of those sensor elements at which the signal portions used for forming the transit time signal have their origin.

14. The detection device of claim 13, wherein a plurality of sensor elements are arranged matrix-like and wherein the evaluation unit compares signal portions originating from different sensor elements in mutually time-displaced relationship and derives a direction signal from the signal portion comparison operation, in such a way that a direction vector results from the spatial arrangement of those sensor elements which are associated with the signal portions of greatest similarity.

15. The detection device of claim 14, wherein the evaluation unit forms at least one parameter which describes a signal portion and stores said parameter in the store.

16. The detection device of claim 15, wherein the evaluation unit and the store are so connected and adapted that a signal portion and at least one parameter describing said signal portion can be stored in association with each other in the store.

17. The detection device of claim 16, wherein the evaluation unit detects the greatest amplitude of a signal portion as the parameter describing the signal portion and stores same in the store.

18. The detection device of claim 17, wherein the additional sensor detects hair color and delivers an additional signal which is dependent on hair color.

19. The detection device of claim 17, wherein the additional sensor is a microphone for detecting an acoustic signal and delivering an additional signal which is dependent on the acoustic signal.

20. The detection device of claim 17, wherein the additional sensor detects a scent signal and delivers an additional signal which is dependent on the scent signal.

21. A device for counting moving persons or objects, wherein the counting device is connected to a detection device as set forth in claim 17.

22. The detection device of claim 1, wherein the radiation source is an infrared light source which preferably emits radiation in the wavelength range of greater than 1400 nm.

23. The detection device of claim 1, wherein the evaluation unit is connected to the radiation source and the sensor arrangement and determines, as an additional signal, the transit time of a signal which is emitted by the radiation source and reflected by the object or person and received by the sensor arrangement.

24. The detection device of claim 2, wherein the evaluation unit is connected to the radiation source and the sensor arrangement and determines, as an additional signal, the transit time of a signal which is emitted by the radiation source and reflected by the object or person and received by the sensor arrangement.

25. The detection device of claim 1, wherein the evaluation unit is connected to the radiation source and the sensor arrangement and determines a degree of reflection as an additional signal.

26. The detection device of claim 24, wherein the evaluation unit is connected to the radiation source and the sensor arrangement and determines a degree of reflection as an additional signal.

27. The detection device of claim 1, wherein the radiation source emits a coded signal and wherein the evaluation unit determines the proportion of the coded signal in the radiation received by the sensor arrangement.

28. The detection device of claim 26, wherein the radiation source emits a coded signal and wherein the evaluation unit determines the proportion of the coded signal in the radiation received by the sensor arrangement.

29. The detection device of claim 27, wherein the evaluation unit forms a degree of reflection from the ratio of the intensity of the proportion of the coded signal in the radiation received by the sensor arrangement to the intensity of the radiation emitted by the radiation source.

30. The detection device of claim 28, wherein the evaluation unit forms a degree of reflection from the ratio of the intensity of the proportion of the coded signal in the radiation received by the sensor arrangement to the intensity of the radiation emitted by the radiation source.

31. The detection device of claim 29, wherein the coded signal is a periodic signal and wherein the evaluation unit determines the transit time of a reflected signal in dependence on the phase relationship between a coded signal received by the sensor arrangement and a coded signal emitted by the radiation source.

32. The detection device of claim 30, wherein the coded signal is a periodic signal and wherein the evaluation unit determines the transit time of a reflected signal in dependence on the phase relationship between a coded signal received by the sensor arrangement and a coded signal emitted by the radiation source.

33. The detection device of claim 1, wherein the sensor arrangement comprises at least two sensor elements and wherein the evaluation unit forms at least two variation signals for different sensor elements.

34. The detection device of claim 31, wherein the sensor arrangement comprises at least two sensor elements and wherein the evaluation unit forms at least two variation signals for different sensor elements.

35. The detection device of claim 32, wherein the sensor arrangement comprises at least two sensor elements and wherein the evaluation unit forms at least two variation signals for different sensor elements.

36. The detection device of claim 1, wherein the evaluation unit compares portions of one or more variation signals which were recorded at the same time as each other or in time-displaced relationship.

37. The detection device of claim 34, wherein the sensor arrangement comprises at least two sensor elements and wherein the evaluation unit forms at least two variation signals for different sensor elements.

38. The detection device of claim 35, wherein the sensor arrangement comprises at least two sensor elements and wherein the evaluation unit forms at least two variation signals for different sensor elements.

39. The detection device of claim 36, wherein the evaluation unit forms a correlation coefficient by comparing the variation signal portions.

40. The detection device of claim 37, wherein the evaluation unit forms a correlation coefficient by comparing the variation signal portions.

41. The detection device of claim 38, wherein the evaluation unit forms a correlation coefficient by comparing the variation signal portions.

42. The detection device of claim 39, wherein the evaluation unit implements a plurality of times comparison of signal portions originating from different sensor elements, in such a way that the signal portions for each comparison are shifted in time relative to each other by different time differences, and wherein a transit time signal is formed, which corresponds to that time displacement which affords the greatest similarity or best correlation of the signal portions being compared.

43. The detection device of claim 42, wherein the evaluation unit forms a speed signal from the transit time signal and from a predeterminable spacing of those sensor elements at which the signal portions used for forming the transit time signal have their origin.

44. The detection device of claim 1, wherein a plurality of sensor elements are arranged matrix-like and wherein the evaluation unit compares signal portions originating from different sensor elements in mutually time-displaced relationship and derives a direction signal from the signal portion comparison operation, in such a way that a direction vector results from the spatial arrangement of those sensor elements which are associated with the signal portions of greatest similarity.

45. The detection device of claim 1, wherein the evaluation unit forms at least one parameter which describes a signal portion and stores said parameter in the store.

46. The detection device of claim 45, wherein the evaluation unit and the store are so connected and adapted that a signal portion and at least one parameter describing said signal portion can be stored in association with each other in the store.

47. The detection device of claim 46, wherein the evaluation unit detects the greatest amplitude of a signal portion as the parameter describing the signal portion and stores same in the store.

48. The detection device of claim 47, wherein the additional sensor detects hair color and delivers an additional signal which is dependent on hair color.

49. The detection device of claim 1, wherein the additional sensor detects hair color and delivers an additional signal which is dependent on hair color.

50. The detection device of claim 47, wherein the additional sensor is a microphone for detecting an acoustic signal and delivering an additional signal which is dependent on the acoustic signal.

51. The detection device of claim 1, wherein the additional sensor is a microphone for detecting an acoustic signal and delivering an additional signal which is dependent on the acoustic signal.

52. The detection device of claim 47, wherein the additional sensor detects a scent signal and delivers an additional signal which is dependent on the scent signal.

53. The detection device of claim 1, wherein the additional sensor detects a scent signal and delivers an additional signal which is dependent on the scent signal.